COMPARING CHINESE AND INDONESIAN STUDENTS' LEVEL OF THINKING SKILLS: A PILOT STUDY

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One of the most important large-scale assessments worldwide, OECD PISA provides information every three years on 'how 15-year-old schoolchildren's mathematics, science and reading skills compare across the globe'. Indonesian students' achievements were far lower than the average, even near the bottom in both PISA 2012 and PISA 2015 (OECD, 2014; OECD, 2016), while students from mainland China outscored their counterparts. This study aims at assessing and comparing Indonesian and Chinese students' levels of three overarching cognitive skills: combinatorial reasoning (CR), inductive reasoning (IR), and working memory (WM). A pilot test has been conducted (1) to examine the feasibility and reliability of computer-based assessment in Indonesia, and (2) to address Indonesian students' development level of CR, IR and WM and to compare it to an Asian benchmark, to the performance of Chinese students. Based on the PISA results, we assumed that Indonesian students at PISA age have at least two years of drawback compared to Chinese students. Thus, the sample was drawn from 28 Indonesian 8th graders who were at the PISA age (age 14–15), and 104 Chinese 6th graders (age 12–13). The tests were delivered via the eDia platform in June 2017. Students had altogether 90 minutes to complete the tests. Students in both countries received the same items; only the languages were different, Indonesian and simplified Chinese. The reliabilities of the tests were high, Cronbach's alphas varied from .75 to .86. Thus, online assessment is feasible in both Asian countries for assessing students' levels of thinking skills. Indonesian students achieved exactly at the same level in all of the examined areas as their two years younger Chinese counterparts (Indonesia: M_{CR}=51.94%, SD_{CR}=15.27%; China: M_{CR}=44.80%, SD_{CR}=26.39%; t=1.81, p>.05; Indonesia: M_{WM}=71.94%, SD_{WM}=24.20%; China: M_{WM}=63.01%, SD_{WM}=17.21%; t=1.84, p>.05; Indonesia: M_{IR}=59.29%, SD_{IR}=17.34%; China: M_{IR}=65.89%, SD_{IR}=24.16%; t=-1.63, p>.05). Significant correlations between three measured thinking skills were detectable for both Indonesian (.44<r<.53, p<.05) and Chinese samples (.47<r<.57, p<.05). This indicated these three thinking skills influence each other during students' cognitive development progress in both countries. The study confirmed the feasibility and reliability of the implementation of online assessment in Indonesia and China. It confirmed that Indonesian students at the PISA age have two years of drawback compared to the Chinese students. Lack of training regarding thinking skills in Indonesian schools could lead to their students' poor achievement in the PISA assessment.

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